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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/047,717	03/25/1998	MAKOTO TANIGUCHI	U-011678-8	3541

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LADAS & PARRY  
26 WEST 61ST STREET  
NEW YORK, NY 10023

EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

25

DATE MAILED: 01/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/047,717	<b>Applicant(s)</b> TANIGUCHI ET AL.	
	<b>Examiner</b> Callie E. Shosho	<b>Art Unit</b> 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 December 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 23-25 and 28-79 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23-25 and 28-79 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. All outstanding rejections except for those described below are overcome by applicants' amendment filed 12/20/02.

The following rejection is non-final in light of the new grounds of rejections set forth below with respect to Tomita et al. '224 (U.S. 5,017,224).

### **Claim Rejections - 35 USC § 102**

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 23-24, 29-33, 41, 43-48, 52-53, 55-56, 58-61, 68, 71-72, and 75-76 rejected under 35 U.S.C. 102(b) as being anticipated by Tomita et al. (U.S. 5,017,224).

Tomita et al. '224 disclose an ink composition comprising water, 0.5-5% cationic resin which has molecular weight greater than 300 and which is identical to the presently claimed cationic water-soluble resin when R<sub>1</sub> is H and R<sub>2</sub> is CH<sub>3</sub> and n is 0 or 1, 5-20% urea such as ethyleneurea or thiourea, alkali-soluble dye, 10-30% solvent including ethylene glycol, butyl carbitol, and butyl cellosolve, nonionic water-soluble resin such as polyvinyl pyrrolidone, base

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such as sodium hydroxide, surfactant, glycerine, triethanolamine, and diethylene glycol (col.2, lines 37-48, col.2, line 62-col.3, line 2, col.3, lines 6-25, 37-42, and 61-62, col.4, lines 5-17 and 61-64, and examples).

With respect to claims 71-72 and 75-76, is noted that the claims recite “consisting essentially of” transitional language and the polymer of Tomita et al. ‘224 comprises primary amino repeating units in addition to the presently cationic repeating unit. However, while it is recognized that the phrase “consisting essentially of” narrows the scope of the claims to the specified materials and those which do not materially affect the basic and novel characteristics of the claimed invention, absent a clear indication of what the basic and novel characteristics are, “consisting essentially of” is construed as equivalent to “comprising”. Further, the burden is on the applicant to show that the additional ingredients in the prior art, i.e. primary amino repeating units, would in fact be excluded from the claims and that such ingredients would materially change the characteristics of the applicant’s invention, See MPEP 2111.03.

Additionally, attention is drawn to polyamine A4 (col.4, line 57) which comprises 0% primary amino groups.

In light of the above, it is clear that Tomita et al. ‘224 anticipates the present claims.

**NOTE:** If applicants were to insert the limitations of claim 28 and claim 57 into claims 23 and 52, respectively, examiner would remove the rejection with respect to Tomita et al. ‘224 given that there is no disclosure or suggestion in Tomita et al. ‘224 that both substituents present in the repeating unit of the cationic resin are methyl groups. In Tomita et al. ‘224, at least one substituent is hydrogen.

Alternatively, if applicants were to insert the limitation into claims 23 and 52 that the cationic resin comprises repeating unit represented by formula I together with repeating unit selected from the group consisting of ethylene, propylene, isobutylene, etc. (see present claims 72 and 76), examiner would remove the rejection with respect to Tomita et al. '224 given that there is no disclosure or suggestion in Tomita et al. '224 that the polyamine contain any additional repeating units.

4. Claims 23-25, 29-32, 34, 40-42, 45-46, 48, 52-56, 58-60, 62, 68, 71-72, and 75-76 are rejected under 35 U.S.C. 102(e) as being anticipated by Takizawa et al. (U.S. 6,174,354).

The rejection is adequately set forth in paragraph 6 of the office action mailed 7/16/02, Paper No. 22, and is incorporated here by reference.

**Claim Rejections - 35 USC § 103**

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

6. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomita et al. (U.S. 5,017,224) in view of Taniguchi et al. (U.S. 5,667,572).

The rejection is adequately set forth in paragraph 10 of the office action mailed 8/21/01, Paper No. 20, and is incorporated here by reference.

7. Claims 34-40 and 62-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stoffel et al. (U.S. 5,555,008) in view of Tomita et al. (U.S. 5,017,224).

Stoffel et al. disclose ink set having reduced bleed that comprises at least one anionic ink and at least one cationic ink. The anionic ink comprises an aqueous carrier medium of water and 5-70% water-soluble organic solvent which has a lower vapor pressure than water such as polyhydric alcohols, a colorant such as pigments or acid and/or direct dyes, and an anionic polymer which can be an acid addition salt. The cationic ink has an aqueous carrier medium and colorant identical to the anionic ink as well as a cationic polymer. If there are more than two inks such as black, yellow, magenta, and cyan, the most important ink is made of one charge characteristic (i.e. anionic or cationic), while the other inks are of the other charge characteristic. Therefore, the ink set may comprise a black ink which is anionic, and cyan, yellow, and magenta inks which are cationic or vice versa, which is identical to present claims 34-36 and 62-64. A method is disclosed where the ink is printed with an ink jet printer onto a recording material to produce a printed image (col.3, lines 1-15 and 28-36, col.4, lines 45-61, col.5, lines 5 and 54-64, col.6, lines 50-67, col.7, lines 25-37, col.8, line 65-col.9, line 8 and col.15, lines 44-48, col.16, lines 25-40, col.17, line 65-col.18, line 35, and col.20, line 54).

The difference between Stoffel et al. and the present claimed invention is the requirement in the claims of specific type of cationic polymer.

Tomita et al. '224, which is drawn to ink composition, disclose cationic resin identical to the presently claimed cationic water soluble resin when  $R_1$  is H and  $R_2$  is  $CH_3$  and  $n$  is 0 or 1 and which has a molecular weight of greater than 300 and is used in order to impart improved water resistance to the ink compositions (col.1, line 67-col.2, line 2 and col.3, lines 37-42).

In light of the motivation for using specific cationic polymers disclosed by Tomita et al. '224 as described above, it therefore would have been obvious to one of ordinary skill in the art to use such cationic polymers as the cationic polymer in the ink set of Stoffel et al. in order to produce an ink set that has improved water resistance, and thereby arrive at the claimed invention.

8. Claims 28, 35-38, 57, 63-66, and 79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa et al. (U.S. 6,174,354).

The rejection is adequately set forth in paragraph 10 of the office action mailed 7/16/02, Paper No. 22, and is incorporated here by reference.

9. Claims 33 and 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa et al. (U.S. 6,174,354) in view of Taniguchi et al. (U.S. 5,667,572).

The rejection is adequately set forth in paragraph 13 of the office action mailed 8/21/01, Paper No. 20, and is incorporated here by reference.

10. Claims 39 and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa et al. (U.S. 6,174,354) in view of Yatake (U.S. 5,746,818).

The rejection is adequately set forth in paragraph 14 of the office action mailed 8/21/01, Paper No. 20, and is incorporated here by reference.

11. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa et al. (U.S. 6,174,354) in view of Tomita et al. (U.S. 5,017,224).

The rejection is adequately set forth in paragraph 15 of the office action mailed 8/21/01, Paper No. 20, and is incorporated here by reference.

12. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa et al. (U.S. 6,174,354) in view of Taniguchi et al. (U.S. 5,667,572).

The rejection is adequately set forth in paragraph 16 of the office action mailed 8/21/01, Paper No. 20, and is incorporated here by reference.

13. Claims 50-51, 69-70, 73-74, and 77-78 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa et al. (U.S. 6,174,354).

The rejection is adequately set forth in paragraph 15 of the office action mailed 7/16/02 Paper No. 22, and is incorporated here by reference.

#### **Response to Arguments**

14. Applicants' arguments filed 12/20/02 have been fully considered but they are not persuasive.

Specifically, applicants argue that:

(a) Takizawa et al. is not a relevant reference against the present claims given that Takizawa et al. disclose ampholytic polymer not cationic polymer as presently claimed.



(b) Tomita et al. '224 is not a proper reference for a rejection under 35 USC 102 given that the claimed cationic resin is only one of several cationic resins disclosed by Tomita et al. '224, the pH adjustor disclosed by Tomita et al. is only an "optional" ingredient and there is nothing in the reference that limits the pH adjustor to the two species exemplified in the specification, and there is no disclosure of the claimed combination of cationic resin and base as presently claimed.

With respect to argument (a), applicants argue that the claims require that the water-soluble resin as a whole to be cationic not just that the resin comprise cationic monomers and that the recitation of cationic resin in the present claims precludes the resin from comprising a proportion of anionic monomers that would render the resin ampholytic.

However, it is the examiner's position that Takizawa et al. do not just disclose polymer with cationic monomers, but that at certain conditions, the ampholytic polymer does in fact function as a cationic polymer. It is agreed that depending on the pH of the liquid media, the amphoteric polymer can function either as an anionic polymer or a cationic polymer and that an ampholytic resin is not a cationic resin unless certain other conditions regarding pH for instance are met. But given that under certain conditions the amphoteric polymer can function as a cationic polymer, it is the examiner's position that Takizawa et al. do meet the claimed limitation of cationic resin.

On page 6 of the amendment filed 12/20/02, applicants argue that a cationic resin is one which will collect at negative pole or cathode when immersed in liquid media and that while ampholytic resin will collect at negative pole when immersed in acidic media and subjected to

electric potential, this does not change the ampholytic resin into a cationic resin. However, given that both the cationic resin and ampholytic resin (under certain conditions) collect at negative pole when subjected to electric potential, this argument would appear to support examiner's position that the ampholytic resin can in fact as cationic resin.

With respect to argument (b), it is noted that all the examples of Tomita et al. '224 require combination of polyamine and pH adjustor, i.e. base, wherein in examples 23-26 and 31-34, the pH adjustor is sodium hydroxide identical to that presently claimed. Further, it is noted that the examples do not specify specific type of polyamine utilized, only the amount of primary amino groups present in the polyamine. That is, the examples do not limit the type of polyamine used in combination with the pH adjustor. The disclosure of polyamine in the examples clearly encompasses all the polyamines disclosed by Tomita et al. '224 including those identical to the cationic resin presently claimed. Thus, it is the examiner's position that Tomita et al. '224 do in fact disclose combination of cationic resin and base as presently claimed.

Further, it is noted that the polyamine is chosen from amongst three types of polyamine-polyethyleneimine, polyacrylamine, and polyvinylamine wherein the polyvinylamine and polyacrylamine are identical to the cationic water-soluble resin presently claimed when  $n$  is 0 and 1, respectively. Further, there are only four choices for the one substituent present on the polyvinylamine. Thus, contrary to applicants' position, the presently claimed cationic resin is not chosen from amongst a large number of polymers given that two of the three polymers disclosed correspond to the cationic polymer presently claimed and there is only a choice of four different

substituents for each polymer. It is the examiner's position that the claimed cationic polymer can be "clearly" envisaged from the disclosure of Tomita et al. '224.

Additionally, given that all the examples of Tomita et al. '224 require the use of pH adjustor, the use of pH adjustor is clearly not an optional ingredient.

Given that Tomita et al. '224 disclose ink comprising colorant, solvent, water, cationic resin, and base identical to those presently claimed, it is the examiner's position that Tomita et al. '224 reference does properly anticipate the present claims and that the reference is used properly in a rejection under 35 USC 102.

**NOTE:** If applicants were to insert the limitations of claim 28 and claim 57 into claims 23 and 52, respectively, examiner would remove the rejection with respect to Tomita et al. '224 given that there is no disclosure or suggestion in Tomita et al. '224 that both substituents present in the repeating unit of the cationic resin are methyl groups. In Tomita et al. '224, at least one substituent is hydrogen.

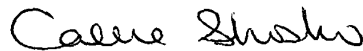
Alternatively, if applicants were to insert the limitation into claims 23 and 52 that the cationic resin comprises repeating unit represented by formula I together with repeating unit selected from the group consisting of ethylene, propylene, isobutylene, etc. (see present claims 72 and 76), examiner would remove the rejection with respect to Tomita et al. '224 given that there is no disclosure or suggestion in Tomita et al. '224 that the polyamine contain any additional repeating units.

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15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Callie E. Shosho  
Examiner  
Art Unit 1714

CS  
January 3, 2003

